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ABSTRACT

A study was conducted to describe Ohio secondary vocational education teachers' use of student assessment information in making instructional decisions. The target population for the study was all teachers who taught in secondary vocational education programs in Ohio public schools. A questionnaire was mailed to a random sample of 393 secondary vocational education teachers stratified by program area; 290 usable questionnaires (74 percent response rate) were received. The questionnaire asked teachers to indicate the extent to which they use information derived from 6 types of assessment methods in addressing 10 different instructional decisions. The six types of assessment methods were as follows: objective paper and pencil items; informal observations; standardized test scores; performance assessments; portfolios; and essay type items. The 10 decision areas in which assessment results are commonly used were the following: plan for instruction; diagnose student weakness; monitor student progress; communicate achievement; motivate students; evaluate instruction; evaluate instructional materials; group students; encourage self-assessment; and assign grades. Teachers rated information provided from performance assessments as being of more use in addressing day-to-day classroom decisions than information obtained from the other five assessment methods. Teachers also relied heavily on objective paper and pencil methods and informal observations. Recommendations included the following: (1) because teachers often use performance assessments, teacher preservice education curriculum should pay particular attention to the development of competence in the use of performance assessments; (2) the Ohio Department of Education should encourage teachers to use standardized test results; (3) further research should be conducted in the area of the use of portfolios in assessment; and (4) further research should be conducted on vocational education teachers' attitudes toward standardized testing and the use of authentic assessment methods. (Contains 18 references.) (KC)

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USING ASSESSMENT INFORMATION IN EDUCATIONAL DECISION MAKING: A STUDY OF OHIO VOCATIONAL TEACHER'S ASSESSMENT PRACTICES

Isaac Kershaw N.L. McCaslin

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Introduction / Theoretical Framework

There has been widespread concern voiced throughout the country about low achievement among the nation's school children. The National Commission on Excellence in Education (1983) declared the United States to be a nation at risk, awash in a rising tide of mediocrity. Since that time there has been no lack of reports criticizing curriculum, administrators, teachers, parents, and students. Concerns for international competitiveness, renewed calls for restructuring, and the accountability movement has prompted a search for the means to achieve excellence in our schools.

In response to requests for change, educational organizations around the country have sought ways to document the effectiveness of their educational programs. State after state has sought to initiate mechanisms which serve to promote accountability for educational outcomes. California, Connecticut, Iowa, Kansas, Maryland, and New Jersey have taken measures to make their educational systems more accountable for student outcomes (McCaslin, 1990). *The Action Plan for Accelerating the Modernization of Vocational Education in Ohio* (Ohio Department of Education, 1990) required that a comprehensive accountability and evaluation system be developed and integrated with the statewide management information system.

On the federal level, the Carl D. Perkins Vocational and Applied Technology Education Act of 1990 required accountability of all states who accept federal funds to support vocational programs. This was to be achieved through a system of specified performance measures and standards which track both academic and occupational competency gains.

Testing at all grade levels has increased due to accountability demands, the information demands of objective-based instructional systems, and competency-based evaluation trends (Green & Stager, 1986). Norm-referenced standardized tests have become the tool of choice in obtaining data for decision making at the state and local level. Those in favor of standardized testing have asserted that such tests promote high standards for learning, facilitate more accurate placement decisions, yield information for the improvement of curriculum and instruction, and help the public hold schools accountable (Dorr-Bremme, 1983).

Standardized testing in American schools has been and continues to be a subject of controversy from the local to the national level. Such tests have proven to be a time and cost effective means for measuring achievement however questions have arisen when significant emphasis was placed on the outcomes of these assessment methods. Worthen and Spandel (1991) have implied that standardized tests do have value when used correctly but provide only part of the picture and have their limits.

Statewide assessment cannot attempt to measure and thereby reflect all that local schools are able to achieve in terms of student outcomes. It has become necessary for schools to measure the attainment of their unique educational objectives (Perlman, 1991). Public outcries for school reform have increased the pressure on teachers to not only construct tests to assess students mastery of skills but to also promote more rigid standards for student accountability (Carter, 1984).

It has become necessary to document that students have more than seat time to account for the learning that was to have taken place in the classroom or laboratory. How

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teachers use assessment information in the classroom and whether its use is effective can play a major role in enhancing and documenting both instruction and learning. How are vocational education teachers using student assessment data? Literature has revealed very little about the assessment practices of this group of teachers. Only recently has the measurement community focused research emphasis upon teacher assessment practices in the academic classroom. Research conducted on the quality and effectiveness of non-vocational teacher training in measurement and assessment has implied that these teachers may not be gaining the appropriate skills necessary for effective use of assessment. If this is true for academic teachers what of the assessment skills of vocational education teachers?

The drive towards increased accountability has placed a demand on teachers to improve instruction and promote higher levels of achievement. To achieve these goals it is important to generate and utilize information which accurately measures effectiveness of instruction and the outcomes of learning. The more accurately teachers judge student achievement and performance the more effective they will be in directing student learning. An increased understanding of teacher practices in assessment use should aid in making more intelligent decisions in directing pupil progress toward worthwhile educational outcomes.

Purpose / Objectives

The purpose of this descriptive-correlational study was to describe Ohio secondary vocational education teachers' use of student assessment information in making instructional decisions. The specific objectives of this study were to:

1. Describe vocational education teachers' perceptions of their use of student assessment data for making instructional decisions.
2. Describe vocational education teachers' perceptions of their competence in the assessment process.
3. Describe vocational education teachers' perceptions of their attitude towards the assessment process.
4. Examine the relationship between teacher use of assessment information and level of competence in the assessment process, and their attitudes towards assessment.
5. Determine the proportion of variance in vocational education teachers' perceived use of assessment information in instructional decision making that could be explained by the independent variables of attitude towards assessment and competence in the assessment process.

Methods / Procedures

The target population for this study was all teachers who taught full time, secondary vocational education programs in Ohio public schools. The study utilized a random sample of 393 secondary vocational education teachers stratified by program area.

A mailed questionnaire was designed by the investigator for use in measuring the variables of interest. To obtain a measure of the dependent variable, teacher use of student assessment information, respondents were asked to indicate the extent to which they use information derived from six types of assessment methods in addressing 10 different instructional decisions. The six types of assessment methods used in the study included; objective paper and pencil items, informal observations, standardized test scores, performance assessments, portfolios, and essay type items. The 10 decision areas where assessment results are commonly used were identified as: plan for instruction,

diagnose student weakness, monitor student progress, communicate achievement, motivate students, evaluate instruction, evaluate instructional materials, group students, encourage self-assessment, and assign grades.

Teacher competence in the assessment process was measured with a series of competency statements based on "Standards for Teacher Competence in Educational Assessment of Students" (American Federation of Teachers, National Council on Measurement in Education, & National Education Association, 1990). A 5-point Likert scale, which ranged from "not competent" to "extremely competent", was used. Teacher attitudes towards assessment was measured using a semantic differential scale. The scale was comprised of nine bi-polar adjectives which described the concept "assessment".

A panel of experts was used to establish content and face validity. The 13 member panel was comprised of university faculty, doctoral students, vocational education teachers, and state department of education staff. Following a review of the instrument, recommendations provided by the panel were incorporated into the instrument where appropriate.

A revised instrument was pilot tested for reliability using a subsample of the population not selected for participation in the main study. A test-retest procedure was used with a two week interval between implementation. The results were compared for percent agreement with values that ranged from .64 to 1.0 for each item. Items were said to be in agreement if the score from the initial test was no more than $\pm$ 1.0 of the score on the retest. Measures of internal consistency were calculated from data obtained from the first phase of the test/retest procedure. Cronbach's Alpha ranged from .81 - .96 with a level of significance established a priori at .05.

Usable questionnaires were received from 290 participants during the six week data collection phase. With 100 participants not responding, a 74% response rate was achieved. Ten percent of the non-respondents were randomly selected and interviewed by phone. Differences between non-respondents and respondents on the dependent variable were examined with a t-test. No significant differences were found between groups on the dependent variable or on the selected teacher characteristics.

Pearson's r coefficient, was used to summarize the magnitude and direction of the relationship between variables. The conventions by Davis (1971) were used to describe the measures of association. Semi-partial, simultaneous multiple regression analysis was used to determine the variance in use of assessment information that was explained by selected independent variables.

Results / Findings

The descriptive statistics related to use of assessment information from each of the six assessment methods are presented in Table 1. Teachers rated information provided from performance assessments ($\underline{M}$=4.28) as being of more use in addressing day to day classroom decisions than information obtained from the other five assessment methods. This stands in slight contrast to Stiggins and Conklin (1992) who found that academic teachers placed more reliance on their own objective type assessment activities rather than on performance assessments for addressing instructional decisions. Given that vocational education teachers use a competency based curriculum, it was not surprising to the researcher that a performance based method of assessment was of more use than objective methods.

Table 1

Descriptive Statistics for the Use of Assessment Information Generated From Six Assessment Methods (n=290)[a]

Decision Areas	Objective Items		Standardized Test Scores		Performance Assessment		Informal Observation		Portfolios		Essay Items	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
1.	3.68	.91	2.28	1.05	4.13	.91	4.04	.83	2.57	1.15	2.55	1.11
2.	3.79	.91	2.60	1.19	4.25	.85	4.25	.76	2.70	1.21	2.61	1.12
3.	3.93	.84	2.19	1.11	4.28	.87	4.20	.76	2.69	1.20	2.59	1.16
4.	3.91	1.01	2.40	1.19	4.31	.88	4.03	.93	3.06	1.36	2.46	1.18
5.	3.40	1.01	2.10	1.06	4.34	.83	4.20	.86	2.81	1.29	2.36	1.15
6.	4.02	.91	2.37	1.22	4.45	.73	4.31	.80	2.85	1.29	2.70	1.34
7.	3.67	1.02	2.27	1.19	4.15	.90	3.99	.95	2.62	1.26	2.51	1.25
8.	3.35	1.18	2.28	1.18	4.11	1.04	4.16	1.00	2.44	1.23	2.22	1.12
9.	3.67	1.08	2.19	1.23	4.27	.88	3.90	1.06	2.94	1.43	2.51	1.33
10.	4.17	.89	1.90	1.18	4.50	.74	3.94	1.14	2.77	1.42	2.77	1.34
Overall Means	**3.76**		**2.26**		**4.28**		**4.10**		**2.74**		**2.53**	

Educational Decision Areas:

1. Plan for instruction
2. Diagnose student weakness
3. Monitor student progress
4. Communicate student achievement
5. Motivate students
6. Evaluate instruction
7. Evaluate instructional materials
8. Group students
9. Encourage self-assessment
10. Assign grades

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Prior studies in assessment use found that teacher made objective tests and informal observations were the assessment methods upon which academic teachers primarily relied (Dorr-Bremme and Herman, 1986; Stiggins & Bridgeford, 1985; Gullickson, 1984). The results from this research study, as indicated in Table 1, corroborate the findings from previous studies and supported the conclusion that vocational education teachers placed a heavy reliance on the use of objective paper and pencil methods (M=4.10) and informal observations (M=3.76).

Portfolios (M=2.74) and essay type assessments (M=2.53) were not found to be of much use for generating information in decision making (Table 1). Although portfolios continue to be promoted in education circles today vocational education teachers did not give particular emphasis to the information generated. Such a low reliance on portfolios may be accounted for by the relative newness of the assessment method. Vocational teachers may have yet to grasp the importance of a long term assessment method and build an assessment method of this type into their overall assessment system.

Standardized test scores (M=2.26) were found to be the least used source of information for decision making (Table 1). This study supported the findings from other studies (Goslin, 1967; Yeh et al., 1981; Green, 1990; and others) regarding the lack of use of standardized test scores in addressing educational decisions. After years of standardized testing, the use of standardized test scores by vocational teachers continues to be minimal.

The frequency distribution of vocational education teachers' competency scores is presented in Table 2. Vocational education teachers in this study reported that they perceived themselves to be moderately to very competent in the assessment process. Eight percent considered themselves to be extremely competent in the assessment process, 63% to be very competent, and 29% to be moderately competent. These results were congruent with findings by Gullickson and Hopkins (1987) which described teachers as being comfortable in their knowledge of assessment. Dorr-Bremme (1983) also concluded that teachers perceived their use of assessment techniques as accurately measuring the effects of their instruction.

Table 2
Frequency Distribution of Summed Teacher Competency Scores (n=290)

Scale Value	Summed Score	f	%
Not Competent	26 - 38	0	0.00
Slightly Competent	39 - 64	2	.69
Moderately Competent	65 - 90	84	28.97
Very Competent	91 - 116	182	62.76
Extremely Competent	117 - 130	22	7.59
Mean= 97.24	SD= 12.89	Minimum= 61 Maximum= 130	

An analysis of teacher attitude towards assessment is presented in Table 3. The majority of teachers (59%) reported having a positive attitude towards assessment (M=41.6). Thirty percent of the teachers reported being neutral in their attitude towards assessment and 12% percent perceived themselves to have a negative attitude towards assessment. The generally positive attitudes found by this study are in agreement with current findings (Green, 1990 & Green and Stager, 1986) where opinions of both experienced and preservice academic teachers towards classroom assessment were positive.

Table 3
Frequencies for Teacher Attitude Towards Assessment Scores (n=290)

Summed Attitude Scores		f	%
9 - 13	Most negative attitude	1	.34
14 - 22		1	.34
23 - 31		33	11.38
32 - 40	Neutral	86	29.66
41 - 49		126	43.45
50 - 58		43	14.83
59 - 63	Most positive attitude	0	.00
	Mean= 41.6		

The correlational analysis between competence in assessment, attitude towards assessment, and use of individual assessment methods is presented in Table 4. Competence in assessment had a moderately positive association with teachers' use of information from objective paper and pencil methods and performance assessments and a low positive association with use of informal observations. Attitude towards assessment had a low association with the use of performance assessments. Use of portfolios, standardized tests, and essay items had only a negligible association with competence in and attitude towards assessment.

Table 4
Intercorrelations Between Selected Independent Variables and Assessment Methods (n=290)

	Intercorrelations						
	X2	Y1	Y2	Y3	Y4	Y5	Y6
Competence (X1)	.27	.30	.05	.32	.20	.17	.18
Attitude (X2)	1.00	.17	.05	.26	.10	.11	.12
Objective (Y1)		1.00	.15	.26	.23	-.04	.27
Standardized (Y2)			1.00	.03	-.13	.30	.29
Performance (Y3)				1.00	.51	.21	.10
Informal (Y4)					1.00	.05	.05
Portfolio (Y5)						1.00	.28
Essay (Y6)							1.00

Regression analyses are found in Tables 5-7. Competence in assessment was found to contribute 7.1% of the variation in teachers use of objective paper and pencil methods (Table 5), 5.7% in use of performance assessment (Table 6), and 3.9% in use of informal observation (Table 7). Attitude towards assessment was found to explain only 3% of the variation in teachers use of performance assessments.

Table 5
Semi-Partial Regression of Use of Objective Paper and Pencil Assessment Methods on Selected Characteristics (n = 290)

Variables	sR^2	b	t	p
Competence	.071	.151	4.78	<.001
Attitude	.007	.076	1.49	.138
(Constant)		18.77		

Standard error = 6.637
Adjusted R^2 = .105
R^2 = .115
For model: F = 12.36, p<.001

Table 6
Semi-Partial Regression of Use of Performance Assessment on Selected Characteristics (n= 290)

Variables	sR^2	b	t	p
Competence	.057	.125	4.46	<.001
Attitude	.030	.146	3.23	.001
(Constant)		24.14		

Standard error = 7.726
Adjusted R^2 = .169
R^2 = .201
For model: F = 6.32, p<.001

Table 7
Regression of Use of Informal Observation on Competence in Assessment (n= 290)

Variables	r^2	b	t	p
Competence	.039	.090	3.40	<.001
(Constant)		32.230		

Standard error = 5.812
Adjusted r^2 = .035
r^2 = .039
For model: F = 11.54, p<.001

Conclusions / Recommendations / Implications

Through a review of literature, the findings of this study, and the subsequent conclusions the researcher has proposed the following recommendations:

1. Given the competency based nature of the programs in vocational education, and given the findings from this study which document the high level of use of performance assessments by vocational education teachers, it is recommended that teacher preservice assessment curriculum pay particular attention to the development of competence in the use of performance assessments.

2. Teachers are not using standardized test results yet it is expected that they use the results of current and upcoming standardized assessments for enhancing instruction and learning. Since the Ohio Department of Education is taking a leadership role in promoting the use of standardized assessment, it should also be responsible for promoting activities which will motivate and assist teachers in using standardized test information.
3. The use of portfolio assessment is currently being promoted in education circles as a means to complement point-in-time assessment techniques. Yet, the use of portfolio assessment was not shown to be of much use to vocational education teachers nor was there a relationship with any of the independent variables investigated. The researcher believes that vocational education teachers may only be in an awareness stage in terms of their adoption of the portfolio assessment method. It is recommended that research be conducted to further investigate the use of portfolio assessment in vocational education settings.
4. It was concluded that attitude towards the overall assessment process contributed little to understanding the use of assessment. It is recommended that future research focus on an examination of attitude towards use of specific assessment methods. Given the current trends in assessment it would be appropriate to focus research on vocational education teachers' attitude towards standardized testing and the use of authentic assessment methods.
5. Overall competence in assessment explained only a small proportion of the variation in teachers use of three of the most used assessment methods. It is recommended that a competency measure oriented toward a specific assessment method be used to more clearly identify specific strengths and weaknesses related to the use of that particular assessment method.

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